DOCUMENT RESUME

ED 236 993 HE 016 764

AUTHOR Conrad, Clifton F.; Talbott, Mary
TITLE The Demographic Transformation of Arizona: Implications for Minority Participants in Higher Education. Topical Paper No. 21.
INSTITUTION Arizona Univ., Tucson. Center for the Study of Higher Education.
PUB DATE Sep 83
NOTE 36p.
AVAILABLE FROM Arizona University, Center for the Study of Higher Education, 1415 North Fremont Avenue, Tucson, AZ 85719.
PUB TYPE Reports - Descriptive (141)

EDRS PRICE MF01 Plus Postage. PC Not Available from EDRS.
DESCRIPTORS Age Groups; American Indians; Asian Americans; Blacks; *College Attendance; Community Colleges; *Demography; *Futures (of Society); *Geographic Distribution; Higher Education; Hispanic Americans; *Minority Groups; Pacific Americans; *Population Trends; Secondary Education; Sex; State Colleges; State Surveys; Whites
IDENTIFIERS *Arizona

ABSTRACT

Implications of the demographic transformation of Arizona for the future of higher education in the state are examined. Since the changing size and character of the minority population figure prominently on the demographic changes, the major focus will be on changes in the minority population and the effect on future minority participation in higher education. Three major demographic characteristics of the state's population are examined: size and distribution, age, and sex. Data are presented for the entire state and, in some instances, its 14 counties. Characteristics of the following racial/ethnic groups are addressed: White, Black, American Indian/Eskimo/Aleut, Asian and Pacific Islander, and Spanish origin. In addition, the number of youths and adults who are limited or non-English speaking is examined by county. Attention is also directed to minority participation in Arizona's high schools, community colleges, and senior postsecondary institutions. After examining minority participation in each of the 15 public community colleges, the three senior institutions are reviewed individually. Framing responses to the changing demographics and monitoring minority participation and success is considered briefly. (SW)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

ED236993

Topical Paper No. 21

THE DEMOGRAPHIC TRANSFORMATION OF ARIZONA: IMPLICATIONS FOR MINORITY PARTICIPANTS IN HIGHER EDUCATION

Clifton F. Conrad
Mary Talbott

U.S. DEPARTMENT OF EDUCATION
NATIONAL INSTITUTE OF EDUCATION
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

This document has been reproduced as received from the person or organization originating it.
Minor changes have been made to improve reproduction quality.

• Points of view or opinions stated in this document do not necessarily represent official NIE position or policy.

"PERMISSION TO REPRODUCE THIS MATERIAL IN MICROFICHE ONLY HAS BEEN GRANTED BY

Center for the Study of Higher Education Univ of Arizona

TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)."

HE 016 764

Center for the Study of Higher Education
College of Education
University of Arizona

September 1983

THE CENTER FOR THE STUDY OF HIGHER EDUCATION
COLLEGE OF EDUCATION
UNIVERSITY OF ARIZONA

The higher education program at the University of Arizona was established first in the early 1960s and reorganized in 1974 to expand as an area of scholarly inquiry, research, instruction, and public service. It was designed as the Center for the Study of Higher Education in 1977. The Center conducts studies, projects, conferences, and forums and makes the results available to other institutions and persons with mutual concerns. Graduate degree programs are designed to prepare two types of administrators: generalists who coordinate policy development and decision making and specialists who facilitate the flow of technical information and provide expertise in a special area. Research programs are conducted in critical areas of public policy concern whether it be state or regional, national, or international in scope. Similarly, public service projects are conducted in major fields of policy study and development. The long-run goals of the Center for the Study of Higher Education are to contribute to the continuing change and improvement in the administration of higher education through the education of its graduates and the improvement of public policy through its research studies and public service projects.

The Center's publications are designed to be relevant to the needs of the University, to the State of Arizona, and to colleges and universities throughout the country. They can be obtained on a limited basis by institutions and associations which are able to exchange publications of a comparable type. Others may obtain a price list by writing to the Director, Center for the Study of Higher Education, University of Arizona, 1415 North Fremont, Tucson, Arizona 85719.

Equal Employment Opportunity/Affirmative Action Employer

"Let us establish an institution of learning; let us pass this bill creating a university, where for all time to come the youth of the land may learn to be better citizens than we are" (Grant, p. 35). With these words, Selmin Franklin helped to convince the Arizona territorial legislature in 1885 to pass "The University Bill," a landmark legislative act that led to the establishment of the University of Arizona. Since the founding of the State's first university, two additional universities have been established and, within the last two decades, a diverse system of public community colleges. All of these institutions, along with several independent colleges and a large number of proprietary institutions, have publicly affirmed a commitment to serving all of the citizens of the State of Arizona.

Despite the widespread and often repeated commitment to serving the educational needs of Arizona residents, higher education with few exceptions has been reluctant to plan for future generations of college students. Except for the relatively recent concern about the size of the birth cohort and the number of students enrolled in elementary and secondary education, there have been few attempts to examine the demographic assumptions that institutions make about their current and future students -assumptions about their age, sex, racial and ethnic background, educational preparation. For whatever reasons, most institutions simply have not examined the composition of the State's population in relation to current and future student clientele and, as a result, a bedrock of demographic assumptions has gone unchallenged.

In the midst of this reluctance to examine statewide demographic trends and their implications for higher education, the size and nature of the Arizona population is changing dramatically. Especially in light of these population changes, current demographic information is essential if institutions and educational policymakers alike are to have an informed understanding of the changing character of the people to be served.

The purpose of this paper is to examine the demographic transformation of Arizona and to explore the implications of that challenge for the future of higher education in the State. Since the changing size and character of the minority population figure so prominently on the demographic landscape, the major focus will be on changes in the minority population and the implications

---

This publication has been adapted from a paper delivered at the American Association of Higher Education Regional Forum entitled "High Schools, Colleges, and the Demographic Transformation of the Southwest: Framing a Response." Presented in San Diego, California on April 27, 1983.

of those changes for future minority participation in higher education. The paper is divided into three major sections. The first section highlights several important characteristics of the population of Arizona, placing major emphasis on the minority component. The second section focuses on current minority participation in education, particularly higher education. In the context of the demographic trends discussed and current minority participation in higher education, the concluding section raises a number of issues about the future of minority participation in higher education in the State of Arizona.

Before turning to the opening section, several caveats are in order. First, the reader should be apprised that there are some substantial gaps in the data on the demographic characteristics of Arizona residents. Unfortunately, it is especially difficult to find and capture data on minorities in Arizona, both in the population at large and within higher education. (In the latter case, it is interesting to note that some higher education institutions have almost no data on minority students, while others refuse to release their data.) While several fugitive studies were found which helped to enrich the data base used here, it should be acknowledged that the analyses and perhaps some findings presented in this paper were shaped in part by the availability of data. Second, owing to data gaps as well as changing data categories used in some sources of information, it was difficult in many instances to identify trends in the data. While trends are discussed whenever the data allow, the lack of comparability in some of the data and the absence of the necessary information frequently militated against trend analysis. Third, while we assume that the data used here are accurate, it must be acknowledged that there is no assurance that these data are valid.

DEMOGRAPHIC PROFILE OF ARIZONA

This section presents a statistical portrait of the demographic landscape in Arizona by examining selected characteristics of the population and, where possible, trends in those characteristics over time. The first part provides an overall demographic profile of the State (except in terms of racial/ethnic composition), and the second looks specifically at the demographic characteristics of the minority population. Throughout this section, data are presented for the entire state and, in some instances, the fourteen counties that make up the State of Arizona.

Overall Demographic Profile

Examined below are three major demographic characteristics of the State's population: size and distribution, age, and sex.

Population Size and Distribution. Based on 1980 Census data, the population of Arizona now includes more than 2,700,000 inhabitants. This figure represents an increase of 51 percent from 1970 to 1980, making Arizona the second-fastest growing state in the nation (next to Nevada) over the last decade. According to projections of future population growth, Arizona is expected to increase its population to approximately 4,600,000 inhabitants by the year 2000, which would represent an increase of about 70 percent over the next two decades (*Arizona Statistical Review*, p.8). As in most Sun Belt states, Arizona has grown rapidly in the last several decades, and that growth is expected to continue, albeit at a somewhat slower rate than in the last twenty years.

FIGURE 1
ARIZONA COUNTIES

The State of Arizona is divided into fourteen counties, as shown in Figure 1. According to 1980 Census figures, slightly less than 25 percent of the Arizona population is located in the twelve largely rural counties. This quarter of the population is distributed unevenly across the twelve counties, with the population ranging from 11,406 in Greenlee to 90,918 in Pinal County. (Yuma County was recently divided into Yuma and La Paz counties, with the latter having about 14,000 residents.)

The remaining 75 percent of the State's population (2,040,495 out of 2,718,215 statewide inhabitants) lives in either Maricopa County or Pima County. The population of Maricopa County is slightly over one and one-half million people, while Pima County has about 530,000 residents. These two counties contain the major urban areas of Phoenix and Tucson, respectively. Within metropolitan Phoenix the city of Phoenix has roughly 800,000 people, while 330,000 people reside in Tucson. Broken into percentages, 55.5 percent of the State's population lives in Maricopa County and 19.6 percent in Pima County. The proportion of the State's population residing in these two counties has changed little in the last decade, increasing only slightly from 74.3 percent in 1970 to 75.1 percent in 1980 (*Arizona Statistical Review*, p. 7). According to projections of the Arizona Department of Economic Security, the proportion of the State's population living in the two most populated counties is expected to stay roughly the same over the next several decades. In summary, Arizona's population continues to grow rapidly, with three-fourths of the population located in Pima and Maricopa counties. The heavy concentration of the population in Phoenix and Tucson is expected to continue into the next century.

Age of the Population. Because Arizona attracts retired citizens from other states, there is a widespread belief that Arizona's population is relatively older than in most other states. This belief, like most myths, combines elements of both truth and fiction. On the one hand, the State's median age of 29.2 is slightly above the national average, as is the 11.3 percent of the population that is 65 years and older. On the other hand, the modal age of Arizona residents is 20-24 years, and the percentage of the population under 5 years of age is 7.9 percent, a figure slightly higher than the national average. Therefore, while there is a relatively larger number of older persons in Arizona compared to other states, this demographic fact should not obscure an equally telling point: Arizona's population under 50 years of age is actually slightly more youthful than in many other states in the nation.

Turning from a statewide perspective to the county level, it should be noted that there is rather striking variation in the age of the population across the fourteen counties in Arizona. The median age of the population ranges from 20.6 years in Apache County to 39.2 years in Yavapai County, and the percentage of the population under 18 years of age ranges from 54.7 percent in Apache

to 24.2 percent in Yavapai County (*Bureau of Census*, 1980, Table 46). Five counties have a median age above the statewide average median age of 29.2, while the other nine have a median age below that figure. As would be expected given their three-quarters share of the State's total population, the median age of the population in the two most populous counties is very close to the statewide median age; the median age is 29.7 in Maricopa and 29.5 in Pima County. The influence of Maricopa and Pima counties notwithstanding, perhaps the most salient point is that several of the rural Arizona counties (such as Apache and Navajo) have a substantially younger population than that of the rest of the State.

Sex of the Population. In terms of the gender of its inhabitants, Arizona reflects the gradual national trend toward a slightly higher female proportion of the total population. In the 1980 Census, 50.8 percent of the population was identified as female. As would be expected, there is relatively little variation in the gender of the population across the fourteen counties. The percentages of females in the population ranges from 48.6 percent in Pinal County to 52.6 percent in Santa Cruz County, with the figure in Maricopa and Pima counties at about 51 percent. Especially given the higher mortality rates of men and the fact that a substantial part of the State's population is over 50 years of age, it seems likely that Arizona's population will continue to become gradually more female in the coming decades (*Bureau of Census*, 1982, Table 1).

Demographic Profile of Minorities in Arizona

While the State of Arizona is clearly being transformed in terms of the demographic characteristics discussed above, nowhere is this change more dramatic—and perhaps less understood—than in terms of the minority population. Within the last decade alone, there have been several major trends in the size and composition of the minority population. Because certain changes in the State's ethnic/racial size and nature seem to have important implications for higher education, this part of the paper examines several characteristics of the minority population that may have special significance for higher education. Three such characteristics are examined below: size and distribution, age, and English fluency.

Population Size and Distribution. The minority population of Arizona—including Blacks, Native Americans (which includes American Indians, Eskimos, and Aleuts), Asians and Pacific Islanders, and persons of Spanish origin—has grown rapidly in the past several decades. Although changes in the reporting categories used in the U.S. Census of Population from 1970 to 1980 preclude longitudinal analysis of census data, unofficial figures establish that Arizona has increased both the number and proportion of its minority population in recent

years. Moreover, the rate of growth in the Arizona minority population is expected to continue to be markedly greater than in the nonminority population over the next several decades.

TABLE 1

Population of Arizona, By Racial/Ethnic Group

Racial/Ethnic Group	Population of Racial/Ethnic Group	Percentage of State Population
White	2,240,761	82.4
Black	74,977	2.8
American Indian, Eskimo, and Aleut	152,745	5.6
Asian and Pacific Islander	22,032	.8
Spanish Origin	440,701	16.2
Other[a]	227,700	8.4
Total	2,718,215	

[a]Because individuals included in the "Other" category of the 1980 Census are not identified as minorities, the above percentages underestimate the minority population.

Source: U.S. Department of Commerce, Bureau of Census. *1980 Census of Population*, "General Population Characteristics," p. 4-122.

According to 1980 Census figures, the total number of minorities in the State is 690,455 or 25.4 percent of Arizona's total population of 2,718,215. (Because individuals included in the "Other" category of the 1980 Census were not identified as minorities, the figures presented here clearly underestimate the minority population.) As displayed in Table 1, the largest minority group is comprised of persons of Spanish origin; over 440,000 people, or nearly one out of every six Arizonans, are Hispanic. While Blacks and Asians and Pacific Islanders combine for nearly 4 percent of the population, a figure substantially below the national averages for those two groups (especially for Blacks), Native Americans comprise 5.6 percent of the State's population. Next to California, Texas, and New Mexico in the Sun Belt region, Arizona has one of the largest—and ethnically and racially most diverse—minority populations in the Southwest.

Examination of the distribution of the minority population across the State reveals that minorities make up a large proportion of the population outside of heavily populated Maricopa and Pima counties. Of the State's fourteen counties, ten have at least a 30 percent minority population, and four have more than a 50

TABLE 2
Minority Population by County

County	Population	Minority Population[a]	% Minority in County
Apache	52,108	41,354	79.4
Cochise	85,686	27,999	32.7
Coconino	75,008	29,840	39.8
Gila	37,080	12,986	35.0
Graham	22,862	8,735	38.2
Greenlee	11,406	5,728	50.2
Maricopa	1,509,052	283,138	18.8
Mohave	55,865	3,933	7.0
Navajo	67,629	37,465	55.4
Pima	531,443	146,386	27.5
Pinal	90,918	38,573	42.4
Santa Cruz	20,459	15,450	75.5
Yavapai	68,145	5,590	8.2
Yuma	90,554	33,278	36.7

[a]The minority population includes Blacks, American Indians, Eskimos, Aleuts, Asian and Pacific Islanders, and persons of Spanish Origin.

Source: U.S. Department of Commerce, Bureau of Census, *1980 Census of Population*, "General Population Characteristics, Arizona," pp. 4-1, 4-11.

percent minority population (see Table 2). Significantly, only Mohave, Yavapai, Pima, and Maricopa counties have less than a 30 percent minority population.

When the minority population is broken down (see Table 3) and examined in terms of its distribution across the State, it is clear that certain minority groups are more likely than others to live outside the two most populous counties. Most significantly, 75.2 percent of the Native Americans in Arizona live outside of Pima and Maricopa counties. Most of these Native Americans live in counties such as Apache and Navajo in which Indian reservations are located (see Figure 2). And, as would be expected, other minorities living outside of Pima and Maricopa counties tend to concentrate in certain areas of the State: Blacks are most likely to reside in Cochise, Pinal, and Yuma counties; Spanish-Americans are most likely to live in Pinal, Santa Cruz, Cochise, and Yuma counties; and Asians and Pacific Islanders are most likely to settle in Cochise County.

TABLE 3

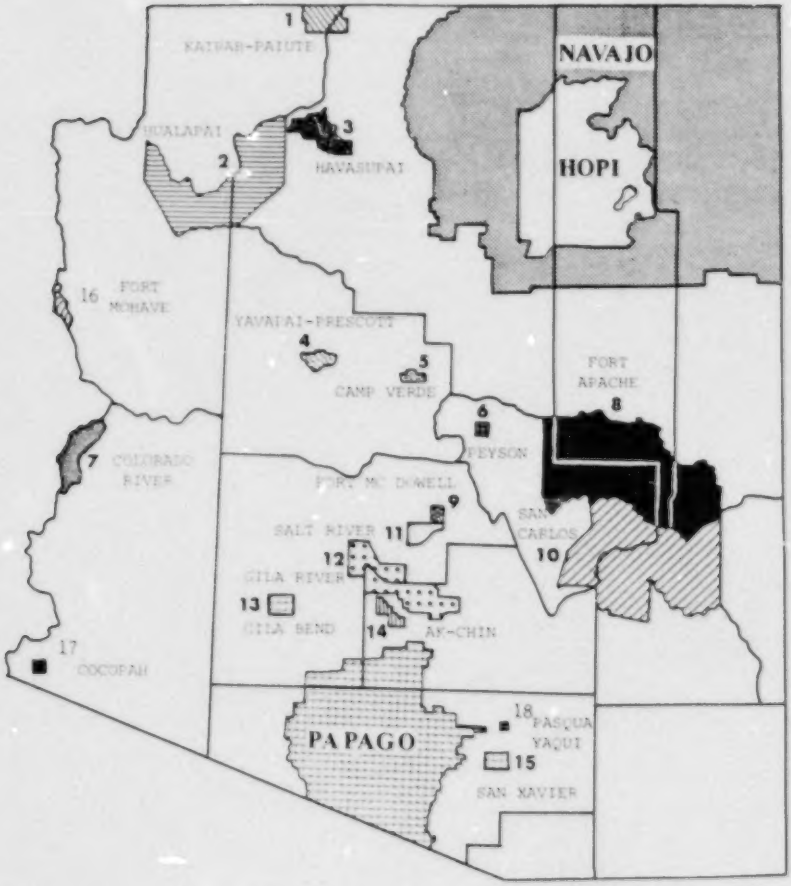
Arizona Population by County, By Racial/Ethnic Group

County	White	Black	American Indian, Eskimo, & Aleut	Asian & Pacific Islander	Spanish Origin	Other[a]	Total
Apache	11,902	271	39,035	65	1,983	835	52,108
Cochise	73,261	3,224	496	1,433	22,846	7,272	85,686
Coconino	49,235	1,275	20,913	337	7,315	3,248	75,008
Gila	30,147	88	5,085	90	7,723	1,670	37,080
Graham	17,085	474	2,744	60	5,457	2,499	22,862
Greenlee	9,357	18	235	29	5,446	1,767	11,406
Maricopa	1,307,455	48,113	22,903	13,119	199,003	117,462	1,509,052
Mohave	53,477	99	1,469	217	2,148	603	55,865
Navajo	32,543	597	32,129	201	4,358	2,159	67,629
Pima	442,888	15,118	14,928	4,922	111,418	53,587	531,443
Pinal	61,849	3,017	8,499	305	26,752	17,248	90,918
Santa Cruz	16,515	69	57	95	15,229	3,723	20,459
Yavapai	65,322	193	1,005	187	4,205	1,438	68,145
Yuma	69,725	2,421	3,247	972	26,638	14,189	90,554

[a]Individuals included in the "Other" category are not identified as minorities.

Source: U.S. Department of Commerce, Bureau of Census, *1980 Census of Population*, "General Population Characteristics, Arizona," p. 4-11.

FIGURE 2
ARIZONA INDIAN RESERVATIONS



1. Kaibab-Paiute
2. Hualapai
3. Havasupai
4. Yavapai-Prescott
5. Camp Verde
6. Peyson
7. Colorado River
8. Fort Apache
9. Fort McDowell
10. San Carlos
11. Salt River
12. Gila River
13. Gila Bend
14. Ak-Chin
15. San Xavier
16. Fort Mohave
17. Cocopah
18. Pasqua Yaqui

While the distribution and concentration of the minority population across the State are notable features of the demographic landscape, fully 62.2 percent of the minorities in Arizona live in Maricopa or Pima County. That this figure is approximately 13 percent less than the 75.1 percent of the total population living in these two counties does not appreciably diminish its overall significance. For as can be inferred from Table 3, this percentage differential seems to be explained by the fact that the Native American population is concentrated on reservations, the largest of which are not in Maricopa or Pima counties, and by the fact that the nonminority population is most likely to live in Maricopa or Pima counties. Indeed, 78.1 percent of the State's nonminority white population resides in these two counties, as does 84.3 percent of the Black population, 81.9 percent of the Asian and Pacific Islander population, and 70.4 percent of the Hispanic population, while only 24.8 percent of the Native Americans live in those two counties. With the exception of Native Americans, then, a substantial majority of all minority groups in Arizona are concentrated in the counties in which Phoenix and Tucson are located (*Bureau of Census*, 1982, Table 1).

In summary, the minority population now comprises more than one-fourth of Arizona's total population and is growing rapidly. While Spanish-Americans are the largest minority group, Arizona has a heterogeneous minority population—including a large number of Native Americans and a fairly substantial number of Blacks and Asians and Pacific Islanders. Significantly, in all but two of the State's rural counties, minorities comprise more than 30 percent of the population, with the various racial and ethnic groups tending to concentrate in certain counties. In terms of absolute numbers, however, over three-fifths of Arizona's minorities live in Maricopa or Pima counties. Except for Native Americans, a large proportion of the minority population lives in the urban areas of Tucson and metropolitan Phoenix.

Age of the Population. Another important characteristic of the minority population that requires consideration is age with respect to racial or ethnic background. Significantly, the minority population is quite young, especially in relation to the nonminority population. In terms of the median age of their population, all four of the major minority groups have a median age under the statewide average of 29.2 years for the total population. However, while the median age of Asians and Pacific Islanders is only slightly below that figure, the three other minority groups have much lower median ages: 23.7 for Blacks, 21.7 for Hispanics, and 19.8 for Native Americans. For each of these latter three groups, over one-half of their population is under 24 years of age. As displayed in Table 4, these same three groups have a modal age that is the same as or lower than the overall modal age, 20-24 for all Arizona residents. (The modal age of Asians and Pacific Islanders is 25-29; however, as Table 4 shows, there are only 14 more people in that cohort than the 20-24 age group.) Perhaps most signifi-

TABLE 4

Arizona Population by Age, By Ethnic/Racial Group

Age	White	Black	American Indian, Eskimo, & Aleut	Asian & Pacific Islander	Spanish Origin	Other[a]
0-4	155,559	7,389	19,607	1,631	54,763	29,697
5-9	156,993	7,198	18,553	1,895	50,731	26,428
10-14	167,338	7,277	19,076	1,732	47,772	24,150
15-19	194,925	8,729	19,927	1,915	50,905	26,521
20-24	210,452	9,082	15,286	2,492	45,814	26,471
25-29	191,675	7,191	11,945	2,506	39,366	22,734
30-34	173,363	5,390	9,824	2,378	31,669	16,809
35-39	137,921	3,898	7,593	1,575	23,909	11,886
40-44	113,887	3,463	6,650	1,415	19,861	9,700
45-49	106,975	3,118	5,642	1,249	17,395	8,087
50-54	111,222	2,698	4,705	965	15,898	7,159
55-59	119,876	2,345	3,884	716	13,076	5,686
60-64	114,911	2,112	2,918	479	9,745	3,980
65+	285,664	5,087	7,135	1,084	19,797	8,392
Total	2,240,761	74,977	152,745	22,032	440,701	227,700

[a]Individuals included in the "Other" category are not identified as minorities.

Source: U.S. Department of Commerce, Bureau of Census, *1980 Census of Population*, "General Population Characteristics, Arizona," pp. 4-15, 4-28, 4-30.

cant is the modal age of Hispanics, which is in 4 years and under age category. Hispanics are very young indeed, even when compared with other minority groups.

Given that the future size and composition of Arizona's population will, in large measure, be determined by the characteristics of the current population, the most significant fact about the current minority population may be this: while minorities now constitute 25.4 percent (estimated conservatively) of the Arizona population, they comprise 33.8 percent of the State's population under 25 years of age. When the minority population under 25 years of age is broken into subgroups, roughly two-thirds of the total minority population is made up of Hispanics across all five of the age cohorts listed in Table 5. Native Americans constitute the second-largest group, followed by Blacks and Asians and Pacific Islanders. To repeat, the most arresting fact about the minority population—and especially Hispanics and Native Americans—is that it is much younger than the rest of the State's population.

TABLE 5

Arizona Minority Population Under 25 Years of Age, By Racial/Ethnic Group

Age	Black	American Indian, Eskimo, & Aleut	Asian & Pacific Islander	Spanish Origin	Minority Percentage of State Population in Age Cohort
0-4	7,389 (3.5)	19,607 (9.2)	1,631 (0.8)	54,763 (25.6)	39.0
5-9	7,198 (3.4)	18,553 (8.8)	1,895 (0.9)	50,731 (24.0)	37.0
10-14	7,277 (3.3)	19,076 (8.7)	1,732 (0.8)	47,772 (21.8)	34.5
15-19	8,729 (3.5)	19,927 (7.9)	1,915 (0.8)	50,905 (20.2)	32.3
20-24	9,082 (3.4)	15,286 (5.8)	2,492 (0.9)	45,814 (17.4)	27.6
Total	39,675 (3.4)	92,449 (8.0)	9,665 (8.0)	249,985 (21.5)	

[a]Percentage of state population in age cohort indicated in parentheses.

Source: U.S. Department of Commerce, Bureau of Census, *1980 Census of Population*, "General Population Characteristics, Arizona," pp. 4-15, 4-28, 4-30.

TABLE 6

English Fluency of the Arizona Population

County	Persons 5-17 Who Speak English Not Well or Not at All	Persons 18 Years and Over Who Speak English Not Well or Not at All	Percentage of Persons 5 and Over Who Speak English Not Well or Not at All
Apache	2,751 (5.3)[a]	5,646 (10.8)	16.1
Cochise	675 (0.8)	3,171 (3.7)	4.5
Coconino	1,058 (1.4)	2,661 (3.5)	4.9
Gila	222 (0.6)	542 (1.5)	2.1
Graham	223 (1.0)	529 (2.3)	3.3
Greenlee	19 (0.2)	173 (1.5)	1.7
Maricopa	4,774 (0.3)	21,743 (1.4)	1.7
Mohave	23 (.04)	178 (0.3)	.3
Navajo	1,783 (2.6)	3,969 (5.9)	8.5
Pima	2,340 (0.4)	10,889 (2.0)	2.4
Pinal	625 (0.7)	2,739 (3.0)	3.7
Santa Cruz	770 (3.8)	2,836 (13.9)	17.7
Yavapai	84 (0.1)	206 (0.3)	.4
Yuma	1,984 (2.2)	5,768 (6.4)	8.6
Total	17,331 (0.6)	61,050 (2.4)	3.0

[a]Numbers in parentheses refer to percentages of the county population.

Source: U.S. Department of Commerce, Bureau of Census, *1980 Census of Population*, "Summary Characteristics for Governmental Units, Arizona," p. 4-5.

English Fluency of the Population. Owing to the large minority population in Arizona, it is not surprising that there are over 78,381 persons in the State over 4 years of age who are not fluent in the English language. According to 1980 Census figures, this means that approximately 2.9 percent of the total State population is not fluent in English. When the English fluency of the population is examined on a county-by-county basis, it is noteworthy that the two counties (Apache and Santa Cruz) with the largest minority populations (dominated by Native Americans and Hispanics, respectively) have the largest percentage of non-English speaking residents. While available data do not establish that English fluency is inextricably linked to the minority composition of the State, it seems likely that many persons not fluent in English are members of the minority population and, further, that they are most likely members of the Hispanic and Native American subpopulations. When that assumption is coupled with the fact that approximately 3 percent of the State's population is not fluent in English, it

would seem that the multicultural character of the State's population requires a response by institutions of higher education.

Having examined selected demographic information and highlighted several minority population characteristics, we now turn to an exploration of the minority population in the Arizona educational pipeline.

MINORITY PARTICIPATION IN EDUCATION

It is no small task to investigate the success of minorities in the educational pipeline that runs from elementary and secondary education through the community colleges and the State's senior postsecondary institutions. The most commonly used approaches to looking at the educational pipeline—such as examining statewide cohort survival data or graduation rates—cannot be used for lack of relevant data. Still, this issue can be examined by analyzing available information on minority participation in education which, in turn, provides a foundation for drawing some tentative conclusions about how well minorities are being served by institutions of higher education in Arizona.

In examining minority participation in education, and especially higher education, this section of the paper addresses two central questions: (1) to what degree are minorities participating in education, from high school through graduate and professional education; (2) to what degree have minorities achieved equal representation throughout the educational pipeline, as indicated by the extent to which the student body composition of institutions is similar to the population from which it is drawn with respect to racial composition and ethnic background? In the case of high school and the three senior institutions, the state population is used for comparison; the community college comparisons are made both with the state population and the respective county population.

Because several factors have been shown to influence minority participation in higher education, questions may be raised about the assumption that the community colleges and the state universities should maintain the same proportion of minorities in their student bodies that exists in the population that they serve. Perhaps most important, most minorities do not graduate from high school at the same rate as other groups and, in turn, are not eligible to attend a four-year college and are less likely to attend a community college. Moreover, for a number of reasons (cultural, financial, familial) some minority groups may not choose to attend college at the same rate as the nonminority population. While individual institutions cannot be held responsible for some of the factors that affect minority participation in higher education, it nevertheless would seem that the long-range goal of both the community colleges and the universi-

ties would be to attract and retain minorities in roughly the same percentages as in the population they serve. At the very least, such a criterion can serve as a useful benchmark against which to monitor minority participation in higher education.

This section is divided into two parts. From a statewide perspective, the first part looks at minority participation at all levels—Arizona's high schools, community colleges, and senior postsecondary institutions. The second part examines minority participation in the community colleges and senior institutions from the perspective of individual institutions.

Minorities in the Educational Pipeline: A Statewide Perspective

Minority Participation in the Senior Year of High School. In the absence of high school graduation rates by racial and ethnic groups, it is informative to examine the percentage of minority enrollment in the senior year of high school throughout the State of Arizona. As shown in Table 7, minorities are well-represented, comprising nearly 27 percent of the senior class in 1981. As would be expected, the relative ranking of the four racial and ethnic groups that comprise the minority population in the senior year of high school reflects the minority composition of the State: Hispanics are most heavily represented, with over three-fifths of the State's minority high school seniors being persons of Spanish origin, followed by a substantial proportion of Native Americans, Blacks, and Asians and Pacific Islanders.

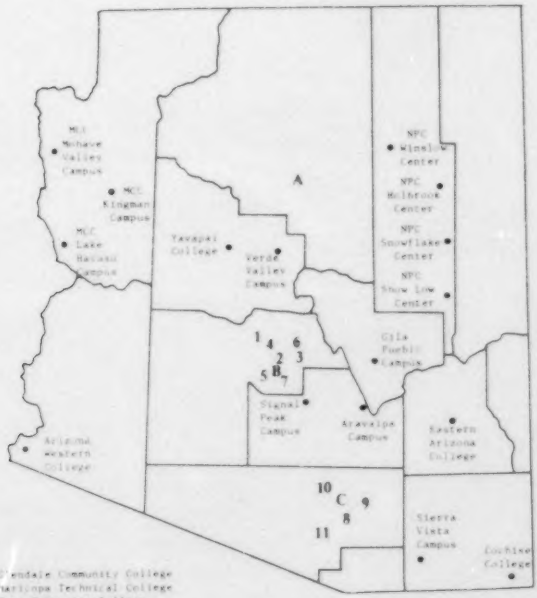
TABLE 7
Statewide Percentage of Minority Enrollment (1981) In Senior Year of High School, By Racial/Ethnic Group

Racial/Ethnic Group	Percent of Senior Class	Percent of State Population	Percent of State Population in 15-19 Age Cohort
Black	3.4	2.8	3.5
American Indian, Eskimo, & Aleut	5.9	5.6	7.9
Asian and Pacific Islander	1.0	.8	.8
Spanish Origin	16.4	16.2	20.2
Total	26.7	25.4	32.4

Source: State of Arizona, Department of Education, Official Communication, Subject: Graduating Seniors, February 1983.

As shown in Table 7, minorities are represented in the senior year population in slightly greater proportion than in the general population of Arizona. However, when compared with the state population in the 15-19 age cohort (see Table 7), a more appropriate comparison group, they are found to be underrepresented in the senior class: minorities comprise 32.4 percent of the total population from age 15-19 but only 26.7 percent of the senior class. Thus, it may be concluded that a lesser proportion of minorities make it to their senior year of high school than is the case with the nonminority population (the only minority group that is an exception is Asians and Pacific Islanders). In summary, while minorities make up a substantial segment of the population in the senior year of high school, they are clearly dropping out of school before that senior year at a higher rate than nonminority students.

FIGURE 3
ARIZONA PUBLIC POSTSECONDARY INSTITUTIONS



1. Glendale Community College
2. Maricopa Technical College
3. Mesa Community College
4. Phoenix College
5. Rio Salado Community College - Centers throughout Maricopa County
6. Scottsdale Community College
7. South Mountain Community College
8. Pima Community College - Downtown
9. Pima Community College - East
10. Pima Community College - West
11. Pima College Community Center - Centers throughout Pima County

A. Northern Arizona University
B. Arizona State University
C. University of Arizona

Minority Participation in Community Colleges. Arizona's public post-secondary structure is a two-tiered system made up of community colleges and senior universities (see Figure 3). The first tier includes fifteen community colleges with twenty-seven campuses and three skills centers located in nine community college districts throughout the State of Arizona. The community colleges are governed by local boards with a coordinating board at the state level. The second tier is made up of three senior universities: The University of Arizona, Arizona State University, and Northern Arizona University. These three institutions are governed by a single statewide governing board, the Board of Regents.

Of the 117,397 students enrolled in community colleges in 1982, 21,694, or 18.8 percent of all community college students, were minority students. Interestingly, the percentage of minority participation in community colleges varies considerably in terms of the full- and part-time status of students: 25.4 percent of the full-time students are minorities, while only 16.6 percent of the part-time students are members of an ethnic or racial minority group. This latter figure may be an important one, for slightly more than three-fourths of all students enrolled in community colleges are enrolled on a part-time basis.

When the minority enrollment (both full- and part-time) is examined by subgroups, Hispanics—as would be expected—make up the largest proportion of the minority population. Native Americans make up the second largest segment of minority students, followed closely by Blacks and then Asians and Pacific Islanders. When the relative proportion of each of these minority groups in community colleges is compared with their relative proportion in the senior year of high school, an important trend can be seen: Blacks and Asians and Pacific Islanders increase their relative share of the minority population at the community college level, while Hispanics and Native Americans decrease their relative share. Put another way, a greater proportion of Blacks and Asians and Pacific Islanders go on to community colleges after high school than do Hispanics and Native Americans.

To what degree have minorities achieved equal representation in community colleges, as measured by the extent to which the student population and the population of the State are similar with respect to racial composition and ethnic background? As displayed in Table 8, minorities account for a substantially smaller proportion of the population in the community colleges than in either the entire state population or the 18-24 age cohort. However, the differences among minority groups are striking: Hispanics and Native Americans are substantially underrepresented, Blacks are only slightly underrepresented, and Asians and Pacific Islanders are slightly overrepresented. These differences notwithstanding, the fact remains that community college participation represents a

TABLE 8

Full-Time and Part-Time Minority Enrollment (1982) In Community Colleges, By Racial/Ethnic Group[a]

Racial/Ethnic Group[b]	FULL-TIME STUDENTS		PART-TIME STUDENTS		Percent of State Population	Percent of State Population in 18-24 Age Cohort
	Total Enrollment	Percent of Total Enrollment	Total Enrollment	Percent of Total Enrollment		
Black	1,156	5.3	2,455	2.8	2.8	3.4
American Indian, Eskimo, & Aleut	1,218	4.2	2,881	3.2	5.6	5.8
Asian and Pacific Islander	512	1.8	1,106	1.2	.8	.9
Spanish Origin	4,037	14.1	8,329	9.4	16.2	17.4
Total	6,923	25.4	14,771	16.6	25.4	27.6

[a]In November, 1982, the total enrollment in community colleges was 117,397 students; 88,707 students (75.6 percent) were part-time, and 28,690 (24.4 percent) were full-time.

[b]856 non-resident aliens (both full- and part-time) were not included here.

Source: Compiled from the "Fall Enrollment and Compliance Report of Institutions of Higher Education: 1982 Survey," which is part of the *Higher Education and General Information Survey.*

narrowing of the educational pipeline for many minority students. In particular, Hispanics and Native Americans—who make up over four-fifths of the State's minority population—attend community colleges at a much lower rate than nonminorities.

TABLE 9

Full-Time Minority Enrollment (1982) in State Universities at the Undergraduate Level, By Racial/Ethnic Group[a]

Racial/Ethnic Group[b]	Total Undergraduate Enrollment	Percent of Total Undergraduate Enrollment	Percent of State Population
Black	874	1.8	2.8
American Indian, Eskimo, & Aleut	889	1.8	5.6
Asian and Pacific Islander	755	1.5	.8
Spanish Origin	2,587	5.2	16.2
Total	5,105	10.4	25.4

[a]In November, 1982, the State of Arizona's three public universities enrolled 81,881 students, of whom 57,181 were full-time (69.8 percent) and 24,700 (30.2 percent) were part-time.

[b]Non-resident aliens were not classified as minority students.

Note: Examination of the enrollment of part-time minority students compared with full-time minority students showed that the percentages are within .1 of each other for every minority group. In other words, the percentage of minority student enrollment is nearly identical for full- and part-time students.

Source: Compiled from the "Fall Enrollment and Compliance Report of Institutions of Higher Education 1982 Survey," which is part of the *Higher Education and General Information Survey*.

Minority Participation in the State Universities. While the community college represents a narrowing of the educational pipeline for minorities, it is at the senior institutions that the pipeline becomes most severely constricted—first at the undergraduate and then at the graduate level. At the undergraduate level, Table 9 shows that minorities make up slightly more than 10 percent of the total enrollment at the University of Arizona, Arizona State University, and Northern Arizona University. (For each minority group, there was not an appreciable difference between full- and part-time enrollment.) This represents a decline of nearly 9 percent from the 18.8 percent minority enrollment in community colleges. This decline in the proportion of minority participation from the two-

year to the four-year institutions is shared almost equally across the respective racial and ethnic groups with one exception: Asians and Pacific Islanders, whose proportion of the total minority enrollment increases slightly in the four-year institutions.

The underrepresentation of minorities in the undergraduate population in the State's three universities is clearly seen in comparisons between the student population and the minority composition of the Arizona population (see Table 9): except for Asians and Pacific Islanders, each of the minority groups examined here is underrepresented at the undergraduate level across the State's three senior institutions. Most significantly, Hispanics and Native Americans make up 21.8 percent of Arizona's total population yet comprise only 7.0 percent of the undergraduate enrollment in Arizona's three public universities.

At the graduate level, both for graduate and professional programs, the pipeline narrows even further. As shown in Tables 10 and 11, 10 percent of the enrollment in professional programs is made up of minorities, while the figure is only 5.5 percent in graduate programs. This indicates a decline of .4 percentage points and 4.9 percentage points, respectively, from the 10.4 percent minority enrollment at the undergraduate level. The underrepresentation of minorities is clearly seen in comparisons between the student population and the Arizona

TABLE 10

Minority Enrollment (1982) in Graduate Programs in State Universities, By Racial/Ethnic Group[a]

Racial/Ethnic Group[b]	Total Graduate Enrollment	Percent of Total Graduate Enrollment	Percent of State Population
Black	115	.9	2.8
American Indian, Eskimo, & Aleut	102	.8	5.6
Asian and Pacific Islander	142	1.1	.8
Spanish Origin	374	2.8	16.2
Total	733	5.5	25.4

[a]In November, 1982, 13,410 students were enrolled in graduate programs in Arizona's three public universities. Figures include both full- and part-time students.

[b]Non-resident aliens were not classified as minority students.

Source: Compiled from the "Fall Enrollment and Compliance Report of Institutions of Higher Education 1982 Survey," which is part of the *Higher Education and General Information Survey*.

TABLE 11
Minority Enrollment (1982) in Graduate Professional Programs in Two State Universities, By Racial/Ethnic Group[a]

Racial/Ethnic Group[b]	Total Graduate Professional Enrollment	Percent of Graduate Professional Enrollment	Percent of State Population
Black	25	1.8	2.8
American Indian, Eskimo, & Aleut	10	.7	5.6
Asian and Pacific Islander	22	1.6	.8
Spanish Origin	81	5.9	16.2
Total	138	10.0	25.4

[a]In November, 1982, 1383 students were enrolled in graduate professional programs in two of Arizona's public universities: Arizona State University and the University of Arizona. (Northern Arizona University does not offer professional programs at the graduate level.) Figures include both full- and part-time enrollment.

[b]Non-resident aliens were not classified as minority students.

Source: Compiled from the "Fall Enrollment and Compliance Report of Institutions of Higher Education 1982 Survey," which is part of the *Higher Education and General Information Survey*.

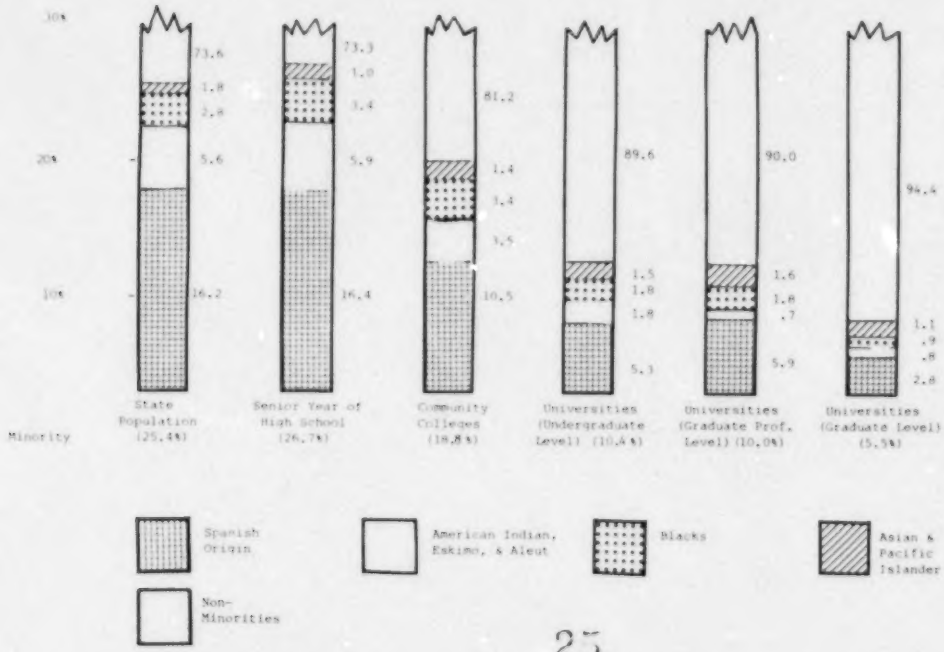
population: while 25.4 percent of the State's population is minority, minorities make up less than 6 percent of the combined graduate and professional school enrollment. With the exception of Asians and Pacific Islanders, each of the minority groups is highly underrepresented in the graduate population of the State's three public universities. Native Americans are the most underrepresented minority group, followed by Hispanics and Blacks.

Summary. As summarized in Figure 4, minority participation in education varies inversely with the level of education: the higher the level, the smaller the proportion of minority participation. At one end of the continuum used here, the senior year of high school, minorities make up 26.7 percent of the total student population. At the other end, the graduate level at the State's three universities, minorities comprise only 5.5 percent of the student population.

When the minority population is broken down by racial and ethnic group, there is considerable variation across the groups. Asians and Pacific Islanders actually increase their relative proportion of the total student population through the educational pipeline, although there is a slight drop in their partici-

FIGURE 4

MINORITY PARTICIPATION IN THE EDUCATIONAL PIPELINE, BY RACIAL/ETHNIC GROUP (PERCENTAGES)



pation at the graduate level. Meanwhile, Blacks show only a gradual drop in participation from the senior year in high school to community college level, after which participation declines moderately through the undergraduate and graduate levels. Hispanics, the State's largest minority group, show a sharp and steady decline in participation through the pipeline, with only one exception: Spanish-American participation at the graduate professional level is slightly higher than at the undergraduate level. Native Americans, the second largest minority group, show a steep and steady decline in participation throughout the educational pipeline.

To what degree have minorities achieved equal representation throughout the pipeline, as indicated by the extent to which the student population and the population of the State are similar with respect to racial composition and ethnic background? Based on this criterion, it is clear that minorities have not achieved equal representation at any level in the pipeline and, further, that representation declines with the level of education. At every level, from the senior year of high school through graduate and professional school, minorities are consistently underrepresented compared to the minority population profile in Arizona—and that underrepresentation increases markedly with the level of education. The only minority group that is an exception to this pattern is Asian and Pacific Islanders.

Where are the major leakage points in the educational pipeline? Unfortunately, this is a question that cannot be answered fully with data only on minority participation. For without graduation rates (or ideally, cohort survival data), it is impossible to tell at which grades or levels, or after which levels, leakage occurs. For example, cohort survival from grade 10 to grade 11 may be drastically reduced for minorities, indicating a primary leakage point; and a secondary leakage point may be occurring after high school graduation and before college entry. Nevertheless, the data examined here on minority participation establish that there is leakage throughout the educational pipeline, with major leakage occurring somewhere between minority participation in high school and in community colleges and minority participation in the State's senior colleges and universities. (It also seems likely that considerable leakage occurs before the senior year of high school, but that cannot be determined because of the absence of essential data.) Thus, while the specific leakage points cannot be identified here, it is clear that minorities are dropping out at a much higher rate than nonminorities during or after (or both) every level in the educational pipeline.

In conclusion, minorities comprise over one-quarter of the State's population. Yet, with the exception of Asians and Pacific Islanders, they are underrepresented in the educational pipeline. At every educational level examined here,

minorities are consistently underrepresented, and, further, that underrepresentation increases markedly with the level of education. That the specific leakage points cannot be identified does not undermine the most telling conclusion: Hispanics, Native Americans, and Blacks are a long way from achieving equal representation in higher education in the State of Arizona.

Minorities in Higher Education: An Institutional Perspective

Turning from a statewide to an institutional perspective, this brief section examines minority participation in individual postsecondary institutions. After an examination of minority participation in each of the State's fifteen public community colleges, the three senior institutions are reviewed individually in terms of their minority enrollment.

Minority Participation in the Fifteen Community Colleges. As shown in Table 12, there is striking variation in minority participation across the fifteen community colleges in Arizona. Nine have a percentage of minority students that exceeds the statewide average of 18.8 percent for all community colleges; the remaining six institutions fall below that percentage—in some instances, far below that figure. Interestingly, the variation in minority enrollment cuts across the urban and rural community colleges: five of the seven two-year colleges outside of heavily populated Maricopa and Pima counties have a minority population that exceeds the statewide average. As further displayed in Table 12, there is a wide range of minority participation in each of the minority groups across the colleges. In the case of Hispanics, Arizona's largest minority group, for example, eight of the fifteen community colleges in the State have less than the statewide average of 10.5 percent Hispanic students. At the extremes, South Mountain's student population includes 42.9 percent Hispanics, while the comparable figure for Scottsdale is 1.8 percent.

While the comparison of minority participation in individual community colleges with statewide averages illustrates the wide range in minority participation across colleges, such a comparison does not recognize that most two-year institutions draw the majority of their students from the county in which they are located and, further, that the State's fourteen counties vary considerably in their minority size and composition. Thus, any thorough examination of the extent to which individual colleges have achieved equal representation would seem to require a comparison of their minority population with the size and composition of the minority population of the county in which they are located. Using this definition, there are substantial differences in the extent to which individual institutions are achieving this goal.

TABLE 12

Minority Enrollment (1982) in Community Colleges, Comparisons with County Population, By Race/Ethnic Group

Community College	County	BLACK		AMERICAN INDIAN, ESKIMO, & ALEUT		ASIAN AND PACIFIC ISLANDER		SPANISH ORIGIN	
		Enrolled/%	% County	Enrolled/%	%County	Enrolled/%	% County	Enrolled/%	% County
Central Arizona	Pinal	168 (3.0)	3.3	569 (10.1)	9.3	35 (.6)	.3	897 (16.0)	29.4
Cochise	Cochise	227 (5.7)	3.8	73 (1.8)	.6	143 (3.6)	1.7	677 (17.1)	26.7
Eastern Arizona	Graham	124 (3.2)	2.1	215 (5.5)	12.0	52 (1.3)	.3	655 (16.9)	23.9
Glendale	Maricopa	328 (2.4)	3.2	99 (1.7)	1.5	232 (1.7)	.9	1,032 (7.7)	13.2
Maricopa Tech	Maricopa	369 (10.6)	3.2	112 (3.2)	1.5	46 (1.3)	.9	469 (13.5)	13.2
Mesa	Maricopa	324 (2.2)	3.2	194 (1.3)	1.5	223 (1.5)	.9	1,046 (7.1)	13.2
Phoenix	Maricopa	600 (4.7)	3.2	314 (2.5)	1.5	250 (2.0)	.9	1,243 (9.8)	13.2
Rio Salada	Maricopa	157 (1.6)	3.2	77 (.8)	1.5	59 (.6)	.9	448 (4.5)	13.2
Scottsdale	Maricopa	78 (1.1)	3.2	168 (2.3)	1.5	55 (.7)	.9	133 (1.8)	13.2
South Mountain	Maricopa	458 (32.9)	3.2	19 (1.4)	1.5	8 (.6)	.9	598 (42.9)	13.2
Mohave	Mohave	2 (.1)	.2	77 (2.4)	2.6	13 (.4)	.4	72 (2.2)	3.8
Northland Pioneer	Navajo	51 (.8)	.9	1,368 (21.4)	47.5	26 (.4)	.3	296 (4.6)	6.7
Pima	Pima	874 (4.0)	2.8	407 (1.9)	2.8	399 (1.8)	.9	3,646 (16.7)	21.0
Yavapai	Yavapai	31 (.6)	.3	296 (5.3)	1.5	43 (.8)	.3	244 (4.4)	6.2
Arizona Western	Yuma	180 (4.6)	2.7	111 (2.8)	3.6	34 (.9)	1.1	910 (23.3)	29.4

[a]% indicates the percent of total enrolled in the particular college.

Source: Compiled from the "Fall Enrollment and Compliance Report of Institutions of Higher Education 1982 Survey," *Higher Education and General Information Survey*, and the U.S. Department of Commerce, Bureau of the Census, *1980 Census of Population*, "Summary Characteristics for Governmental Units, Arizona," p. 4-1.

For all fifteen community colleges, Table 12 shows clearly that some institutions are achieving a greater degree of equal representation and hence are providing more opportunities for minorities. At the one extreme, Maricopa Tech and South Mountain have a greater percentage of minority students than the percentage of minorities in the county (Maricopa) in which they are located. At the other extreme, Scottsdale has a minority enrollment of only 5.9 percent, which is nearly 12 percent less than the population of the county in which it is located (Maricopa). (It should be noted that Maricopa is a large county and some districts, such as Scottsdale, have a markedly different minority size and composition than the overall county. Hence the degree of underrepresentation may be overstated in this and other instances if it is assumed that the district—rather than the county—is the more appropriate comparison.) In between these two extremes fall the other twelve community colleges. In varying degrees each of these two-year colleges has an overall percentage of minorities that is less than the minority percentage for the appropriate county, though in some instances a college has one or more of the four major minority subgroups represented in greater proportion than in the population of the county in which it is located.

Minority Participation in the State Universities. In Arizona's three public universities, where the overall proportion of minority students is considerably less than in the two-year colleges, there is much less variation in overall minority enrollment patterns between institutions (see Table 13). At one end of the continuum, the University of Arizona enrolls 8.6 percent minority students, while at the other, Northern Arizona University enrolls 11.2 percent minorities. There is, however, slightly more variation with respect to the enrollment patterns of specific minority groups. Most noteworthy, Northern Arizona University has a much higher proportion of Native Americans and a much lower proportion of Asians and Pacific Islanders than the other two institutions. On the other hand, the University of Arizona has the largest proportion of Hispanics.

Defining equal representation to mean that the student population of a university and the population of Arizona are similar with respect to minority size and composition, all three state universities fall short of having equal representation. Northern Arizona University, with the largest proportion of minorities among the three state universities, has a minority percentage that is more than 14 percent below the combined percentage of minorities in the Arizona population. When the minority population is broken into subgroups, only Asians and Pacific Islanders at the University of Arizona and Arizona State University are represented in roughly the same proportion as in the general population of the State. All of the other minorities are substantially underrepresented at all three state universities. Thus, with only one exception (Asians and Pacific Islanders), equal representation for minorities has not been achieved in the State's three universities.

TABLE 13

Total Minority Enrollment (1982) in Senior Institutions, Comparisons with State Population, By Racial/Ethnic Group

Racial/Ethnic Group	UNIVERSITY OF ARIZONA			ARIZONA STATE UNIVERSITY			NORTHERN ARIZONA UNIVERSITY		
	Total Enrollment	Percent of Enrollment	Percent of State Pop.	Total Enrollment	Percent of Enrollment	Percent of State Pop.	Total Enrollment	Percent of Enrollment	Percent of State Pop.
Black	392	1.3	2.8	817	2.1	2.8	112	.9	2.8
American Indian, Eskimo, & Aleut	241	.8	5.6	398	1.0	5.6	596	5.0	5.6
Asian and Pacific Islander	396	1.3	.8	710	1.8	.8	57	.5	.8
Spanish Origin	1,622	5.3	16.2	1,620	4.1	16.2	568	4.8	16.2
Total	2,651	8.6	25.4	3,545	9.0	25.4	1,333	11.2	25.4

Source: Compiled from the "Fall Enrollment and Compliance Report of Institutions of Higher Education 1982 Survey," which is part of the *Higher Education and General Information Survey*.

Summary. As would be expected, there is much more variation in minority participation across the two-year colleges than in the state universities. Indeed, there is only modest representation in the latter institutions, especially in terms of overall minority participation. Overall, all but four community colleges have gone farther than all three of the universities toward achieving the goal of equal representation for minorities, notwithstanding the wide variation in minority participation across all fifteen community colleges in the State. In the final analysis, however, the central finding of this paper remains unaffected by this examination of minority participation in individual institutions: although a few community colleges can be said to have equal representation for minorities, almost all two-year institutions and especially the state universities have not achieved equal representation of minorities.

Issues Related to Minority Participation in Higher Education in Arizona

As this paper has made clear, a gap currently exists between the demographic characteristics of the State's minority population and the realities of minority participation in higher education. On the one hand, the minority population continues to grow in size and racial and ethnic diversity. On the other hand, minority participation in education is substantially less than in the nonminority population, especially at the apex of the educational pyramid—the graduate level in Arizona's three senior institutions. Placed in this context, the future of minority participation in higher education can be viewed as a drama set on the stage of the changing demographic characteristics of Arizona's minority population.

A major purpose of higher education in Arizona is to provide educational opportunities for all of Arizona's citizens. Accordingly, it follows from the findings presented here that the State's colleges and universities must respond more systematically to the new demographics, framing institutional responses that will enhance minority participation and minority success throughout the educational infrastructure. Based on our analysis, what kinds of considerations might inform individual and institutional initiatives designed to enhance minority participation in higher education in the State of Arizona? Three broad categories of response are discussed below.

Understanding the Demographic Challenge. This paper has sketched a demographic profile of the State's minority population, highlighting its substantial size and multicultural character. While this profile can provide a useful point of departure for shaping higher education's response to Arizona's minority population, there remains a clear and compelling need for comprehensive and accurate statewide data on the minority population. For aside from United States census data and occasional population studies by the Department of Economic Secur-

ity, there is a paucity of data regarding the changing size and character of the State's minority population.

It would be highly advisable for the State of Arizona—probably through its Department of Economic Security—to develop a longitudinal data base for looking at past trends, examining current trends, and predicting future trends in the minority population. Such a data base should, as a minimum, include information on the size, distribution, age, and English fluency of each minority group in the State as well as the total minority population. Moreover, ongoing ethnographic profiles of the different cultural groups would provide information needed for developing effective strategies for attracting and retaining minority students. If institutions and state policymakers alike are to plan for future minority participation, they must have valid and reliable information about the current minority population and sound predictions about its future size and composition.

Monitoring Minority Participation and Success. It has been established that minority participation in education varies inversely with the level of education: the higher the level, the smaller the proportion of minority participation. That minorities have not achieved equal representation throughout the pipeline is a significant finding, yet minority participation provides only a partial indicator of minority success at each level and at each institution in the pipeline. In order to more fully assess minority success in higher education, it is also necessary to determine at which grades or levels, or after which levels, most leakage occurs. At what points, and why, do minorities drop out of the pipeline?

In order to investigate minority leakage, it is necessary for high schools and colleges—in concert with the appropriate governing and coordinating boards—to collect comparable data on minority success at each level and from each institution in the educational pipeline. By using graduation rates (or ideally, cohort survival data) to monitor minority success at each level and institution in the educational pipeline, institutions and state agencies can go a long way toward identifying leakage points with increased precision. In turn, the size and location of major leakage points for each minority group should influence strategies designed to increase minority participation, retention, and completion.

Complementing data collection efforts aimed at pinpointing minority progress, institutional and statewide studies should be targeted at identifying factors contributing to minority persistence and drop-out throughout the educational pipeline. In other words, why do minorities remain in and leave school when they do? For obvious reasons, answers to this question may help institutions to adopt strategies for attracting and retaining minority students.

Beyond data collection efforts, the findings presented here regarding minority participation suggest that virtually all institutions in Arizona need to reexamine their current efforts to attract, retain, and serve minority students. What programs are working, and which ones are not? Evaluation of current efforts can provide a foundation for increasing both the quantity and the quality of minority involvement in higher education.

Framing Responses to the Changing Demographics. Notwithstanding the need for additional data on minorities and minority success in higher education, the major implication of this study can be stated simply: both postsecondary institutions and state agencies need to develop new strategies of response to help promote minority participation and success throughout the educational pipeline.

In framing intervention strategies, it may be helpful for institutions to consider the following questions:

> Since the minority population in Arizona is highly diverse—including a large number of Hispanics and Native Americans as well as Blacks and Asians and Pacific Islanders—to what extent should institutional intervention strategies be adapted to specific minority groups instead of targeted at the minority population as a whole?
>
> How do current policies—such as the recent decision at the three universities to raise entrance requirements—effect efforts to increase minority participation and success in higher education?
>
> What kinds of collaborative initiatives among community colleges, universities, and high schools can be designed to improve the quality of high school education for minorities?
>
> What kinds of initiatives can be designed to restructure admissions and attendance patterns in institutions, such as new options for talented students, experimental admissions criteria, and new articulation arrangements?
>
> What kinds of initiatives can be designed to improve the quality of curricula, instruction, and advising for culturally diverse students?

For the appropriate state agencies, including but not limited to the Board of Regents and the State Board for Community Colleges, several additional questions may help to inform initiatives to enhance minority involvement in higher education:

> Given the large proportion of minorities that comprise the State's rural population, coupled with the fact that the three universities are located in the urban centers of the State, how can the senior institutions be encouraged to more effectively serve rurally located minorities so as to provide them with opportunities for upper-division and graduate work?

How can both public and independent institutions throughout the State be encouraged to attract, retain, and better serve minority students at the undergraduate level?

How can collaborative efforts among high schools, community colleges, and universities be encouraged in order to enhance minority participation throughout the educational pipeline?

How can the State help to insure that all high school graduates are adequately prepared to participate in higher education?

Summary

Like most states in the Southwest, Arizona has a sizeable and diverse minority population. Despite the efforts of many individuals and institutions throughout the State, however, minorities are substantially underrepresented throughout the educational pipeline. If the commitment to equal opportunity is to be honored, individual institutions and state policymakers alike must initiate new efforts aimed at enhancing the minority experience throughout the educational pipeline.

In a broad sense, this paper might serve as a point of departure for at least some of those efforts. Demographic trends and minority participation rates have been brought into focus, and three broad categories of response have been suggested. Yet much remains to be done. Out of this broad framework must emerge new approaches and initiatives for improving educational opportunities for minorities. It is a commitment not to be taken lightly.

REFERENCES

Arizona Statistical Review. Valley National Bank of Arizona. 38th Annual Edition, September 1983. "Arizona Population Projections."

Bureau of the Census. *General Population Characteristics, Arizona.* PC 80-1-B4. Washington G.P.O., April 1980. Table 46, "Persons by Age for Counties 1970-1980."

Bureau of the Census. *Summary Characteristics for Governmental Units and Standard Metropolitan Statistical Areas, Arizona.* PHC 80-3-4. Washington G.P.O., September 1982. Table 1, "Summary of General Population Characteristics 1980."

Bureau of the Census. *Summary Characteristics for Governmental Units and Standard Metropolitan Statistical Areas, Arizona.* PHC 80-3-4. Washington G.P.O. Table 3, "Summary of Social and Employment Characteristics 1980."

Grant, Arthur T., ed. *Higher Education in Arizona,* Arizona Academy, Phoenix, Arizona, August 1966.

PUBLICATIONS OF THE CENTER FOR THE STUDY OF HIGHER EDUCATION

College of Education University of Arizona

Monographs

Institutional Efficiency in State Systems of Public Higher Education, by Fred Harcleroad.

The Regional State Colleges and Universities in the Middle 1970s, by Fred Harcleroad, C. Theodore Molen, Jr., Suzanne Van Ort.

Changing Patterns of Governance in Higher Education, by John Corson, Marvin Johnson, T. Harry McKinney, John Millet, Allan Ostar.

Council of Universities and Colleges: An Introductory History, by Doris Meek, Don Morgan.

The Impact of Federal Policies on Higher Education Institutions, edited by A.T. Grant.

The State Legislative Process and Higher Education, edited by A.T. Grant.

Financing Postsecondary Education in the 1980s, edited by Fred Harcleroad.

Financing and Budgeting Postsecondary Education in the 1980s, edited by Larry Leslie and Heather Otto.

Higher Education Financing Policies: States/Institutions and Their Interaction, edited by Larry L. Leslie and James Hyatt.

Responses to Fiscal Stress in Higher Education, edited by Robert A. Wilson.

Survival in the 1980s: Quality, Mission, and Financing Options, edited by Robert A. Wilson.

Topical Papers

No. 1 *Evaluating Higher Education,* by C. Robert Pace.

No. 2 *Values and American Higher Education,* by Earl McGrath.

No. 3 *Lifelong Learning: Higher Education's Response,* by Raymond Schultz.

No. 4 *Public Policy and Higher Education,* by John Corson.

No. 5 *Will There Be a Community College in the Year 2000?,* by Arthur Cohen.

No. 6 *Are Church-Related Colleges Losing Students?,* by Earl McGrath.

No. 7 *Careers, Values and General Education,* by Earl McGrath.

No. 8 *Higher Education Enrollments: Implications for the 1980s,* by Garland G. Parker.

No. 9 *Institutional Assessment and Evaluation for Accreditation,* by Joseph J. Semrow.

No. 10 *The Role of Public Student Aid in Financing Private Higher Education,* by Larry Leslie.

No. 11 *Are Liberal Arts Colleges Professional Schools: A Restudy,* by George Lepchenske, Fred Harcleroad.

No. 12 *Tax Allowances for Nontraditional Students,* by Larry L. Leslie.

No. 13 *The Private Costs of Postsecondary Education,* by Lowell J. Crary, Larry L. Leslie.

No. 14 *The Setting of Tuition in Public Higher Education,* by Larry L. Leslie, James Rusk.

No. 15 *Home Economics as an Academic Discipline: A Short History*, by Marie Negri Carver.

No. 16 *Management of the College or University: It's Different!*, by John J. Corson.

No. 17 *Patterns of Enrollment in Higher Education: 1965 to 1977, Research Universities*, by Kenneth G. Brown, Arthur T. Grant, Larry L. Leslie.

No. 18 *Hispanics and Community Colleges*, by Alfredo G. de los Santos, Jr.

No. 19 *Patterns of Enrollment in Higher Education: 1965 to 1977, Liberal Arts Colleges*, Larry L. Leslie, Arthur T. Grant, Kenneth G. Brown.

No. 20 *Making Decisions About the Curriculum: From Metaphor to Model*, by Clifton F. Conrad, Anne M. Pratt.

Wilson Lecture Series

No. 1 *Values in Higher Education*, by O. Meredith Wilson.

No. 2 *Values in Higher Education: Conflict and Accommodation*, by Burton R. Clark.

Publications may be obtained by writing to:

Director, Center for the Study of Higher Education
University of Arizona
1415 North Fremont Avenue
Tucson, Arizona 85719